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ABSTRACT

Students studying office administration as a career at Lehman College (New York) participated in a case study reenactment in order to learn the processes involved in using an "Office Automation Committee" to ensure the successful planning and implementation of office automation. Based on the experience of the National Institute of Corrections, a small federal agency, the operations study involved the use of an in-house, office automation committee, an organizational mechanism that is broadly applicable to numerous other firms and offices. Students collected data on the office functions, available hardware alternatives, staff training needs, and previous efforts to assess office automation needs. They then worked as a committee to design the office automation system, construct a detailed implementation plan, and design follow-up productivity surveys. The case study permitted students to reenact a real life scenario and helped them appreciate the types of problems likely to be encountered in attempting to manage change in a complex organization. (EW)

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Planning and Implementing the Automated Office:

Maintaining Control over the Technology

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**Planning and Implementing the Automated Office:
Maintaining Control over the Technology**

This paper describes a process for controlling the planning and implementation of an automated office. The description centers on a project initially conducted for a Federal agency (COSMOS, 1984).

As a result of the developments in information processing technology combined with corresponding reductions in the costs of these equipments, businesses have been implementing office automation systems in increasing numbers. These systems differ from their word processing counterparts in the following ways:

* Office automation systems are multi-functional, covering finance and budget analysis, records processing, and other office functions in addition to the traditional word processing;

* The affected work stations include those of professional and support staff, and not just support staff;

* The technology provides for more point-to-point communication patters, among work stations, than the typical radial patterns of the traditional word processing systems;

* The technology is microprocessor-based allowing for much independence among work stations.

Much more is at stake in implementing these systems than the mechanizing of the secretarial pool. The implementation of office automation systems may affect the integration of supervisory levels from the top to the bottom of the firm or

agency - a complex change that can result in qualitative changes in office functions and productivity. Aspiring managers who ignore this potential impact are missing opportunities to strengthen the competitive position of the firm or agency in relation to other organizations.

Because these organizational implications go far beyond those of the traditional word processing system, knowledge about how to manage the implementation of office automation systems has become a critical matter, one which should be integrated into the college office administration curriculum. How should an executive respond? What resources are available? What pitfalls should be avoided? How can new systems be introduced without disrupting ongoing work? These are all questions that require answers, if offices and firms in the future are to take full advantage of office automation systems.

Students studying Office Administration as a career at Lehman College participate in a case study reenactment in order to learn the processes involved in using an "Office Automation Committee" to ensure successful implementation of the automated office. The operational study (COSMOS, 1984), is based on the experience of the National Institute of Corrections (NIC), a small federal agency. The case involves the use of this organizational mechanism -- an in-house, office automation committee (OAC) that is broadly applicable to numerous other firms and offices.

The Lehman College students were assigned to positions corresponding to each of the key positions on the organization chart (Figure 1).

The Committee is the primary means for maintaining managements's control over the use of office automation technology, and form capturing the full advantage of such a systems on behalf of the entire firm or agency.

Control means:

o Having the rudimentary technical knowledge internal to the organization;

o Being able to negotiate intelligently with vendors, throughout the implementation process and not just at the purchase or adoption stage;

o Remaining independent of external consultants;

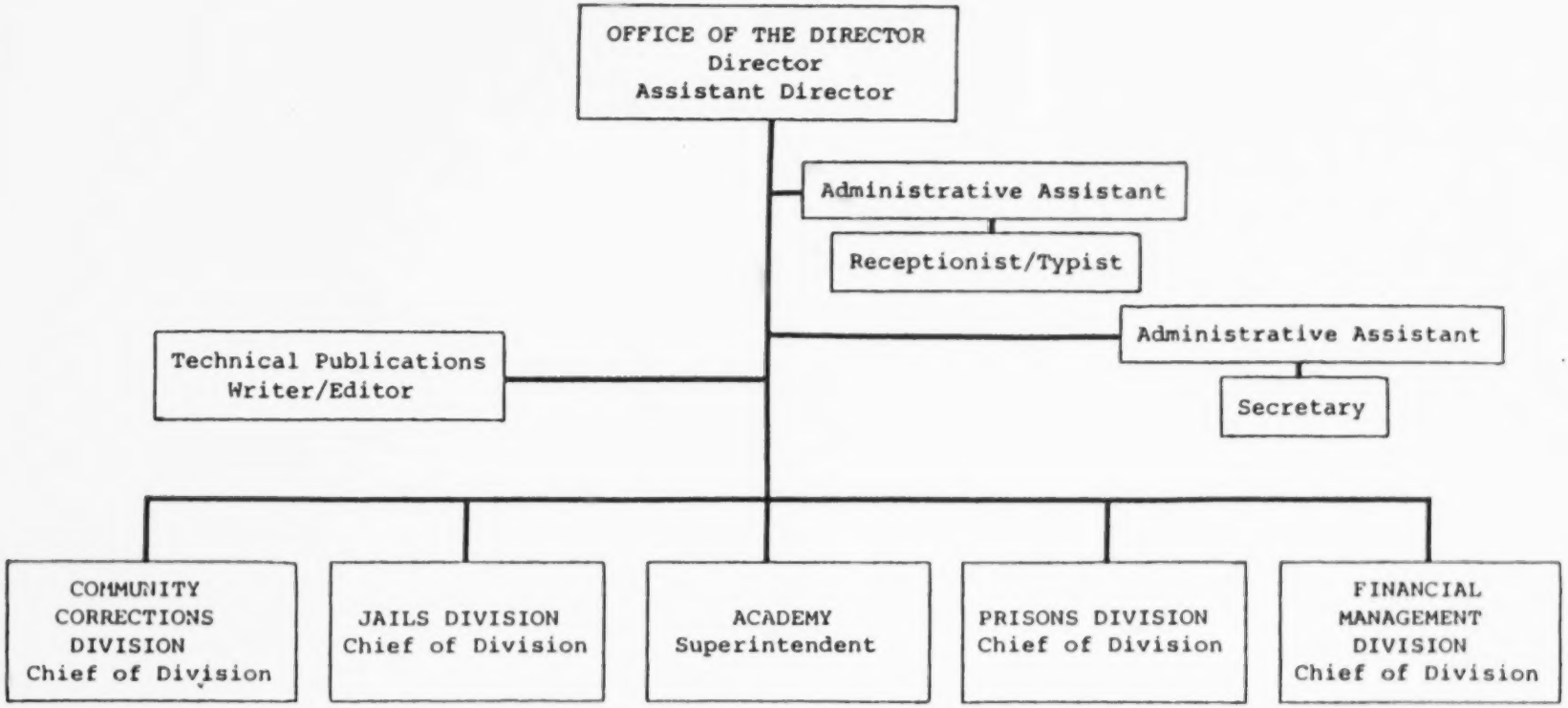
o Assuring that the specific tasks conducted by the system are properly merged with the ongoing tasks of the organization; and,

o Assuring that the new system blends well with the firm or agency's traditional values about how to organize people productively.

The students were apprised of NIC's background as follows. In early 1983, NIC's management began to examine its needs for new office automation equipment. At that time, NIC's equipment was largely obsolete and incompatible. The equipment included: five word processing units of three different brands (three were

Figure 1

NATIONAL INSTITUTE OF CORRECTIONS ORGANIZATION CHART*



*As of May 1983

single-line display units); three memory typewriters of different brands; two telecopiers; two dumb data terminals for linking to the MIS; and one microcomputer. This equipment was distributed among NIC's four divisions and its information center.

The use of an in-house, Office Automation Committee (OAC) is one recognized strategy for implementing office automation systems. The OAC represents a strategy with the greatest long-term benefit to a firm or agency, and the case study has been organized to highlight the use of this strategy.

Organization of an OAC:

The OAC serves two important objectives. First, the OAC distributes a set of individual responsibilities, regarding the office automation process among staff members. Second, the OAC allows management to have a continuing mechanism for implementing a sequence of changes over time.

The committee consists of representatives from each of the major operating components of the organization. In addition, the committee has among its members the key representatives of both professional and support staff. The chair of the OAC is an official of the organization. This leadership gives the committee:

- o A priority among other organizational activities;
- o The resources for leasing the new system;
- o Funds for related expenses; and
- o The use of a temporary external consultant as an

advisor to the committee.

Serving under the chairperson is a senior level staff member, who directed the day-to-day implementation process. This includes solving problems, dealing with the vendor, supervising the activities of other OAC members, and assuring that the timeline and decisions of the committee were appropriately followed.

The OAC designates other individuals to be responsible for specific tasks. For example, one task can be a work station survey; another the identification of the phone, electrical,and furniture needs associated with the new equipment; and a third, the development of a rotation schedule for the staff training. One of the OAC committee members might have a strong technical or computational background. All are representatives of organizations regular staff, and all have to master certain basic information about office automation systems. The work of the committee will only be minimally disrupted by the normal turnover in staff, including key secretarial positions. Without such a committee, any turnover in such positions may leave the organization without adequate continuity during the implementation process.

The committee (and the student committee) identifies three phases. It developed a general timeline for each phase, which included the milestones and the planning and implementation process (Figure 2).

Figure 2

THREE PHASES IN NIC's OFFICE AUTOMATION PLAN

PHASE	ACTIVITIES
Phase I: June 1983 - April 1984	-Analyze office automation needs -Evaluate alternative configurations of office automation equipment (e.g., centralized vs. decentralized) -Decide on preferred configuration; number of units to be obtained -Identify vendor and obtain equipment -Install equipment -Train support and program operators -Remove old equipment -Evaluate Phase I; make any needed adjustments
Phase II: May 1984 - October 1984	-Determine need for further units for support staff, if any -Determine number of units and software to meet initial program staff needs -Develop implementation plan for Phase II -Evaluate Phase II; make any needed adjustments
Phase III: November 1984 -	-Obtain additional units and software, as indicated -Assess feasibility of moving the MIS system in-house

Phase I will have three objectives: (1) to install the first order of new equipment and remove all of the old word processing equipment; (2) to add a capability to communicate between the offices; and (3) to provide training for an initial set of agency staff.

For Phase II, the objectives are (1) add new work stations as needed and (2) provide specific work stations for use by program (and not just support) staff, for composition, certain reporting requirements, and data analysis. It is also assumed that Phase II would include a limited amount of downloading of files--from the agency's MIS--for local data analysis. Finally, the Phase III objectives are to (1) evaluate the initial system; (2) consider further upgrading of equipment or software--e.g., to add more storage capacity in the form of hard disks, and (3) explore the feasibility of moving the MIS internally into the organization.

Data Collection

First, the OAC (and the students) collect data of several sorts:

- The functions of the organization's staff, from a work station survey;
- The hardware alternatives available for automating office functions, from work done by the temporary consultant to the OAC;
- The training needs of staff, from an informal survey; and

- A review of the reports from any previous efforts to assess the office automation needs.

The survey includes the work station of every professional and support staff member, and not just those with keyboards. The survey covers questions about the activities conducted at each work station--e.g., composition, communication, typing, and data analysis--and the frequency with which the activities were undertaken (i.e., daily, weekly, never). The data are analyzed and prepared in summary form for consideration by the full committee.

On the basis of the survey results, the OAC will be able to make an informed judgment about the number of automated units that are required, the work stations where the units would be located, and the type of functions to be performed (software needed) at each of those work stations. In addition, the responses to an open-ended questions about the possible future uses of the office equipment help the OAC to understand how agency staff view the future potential and applications of office automation equipment.

Design and Selection of the Office Automation System

One of the most crucial questions facing the OAC is the configuration of office automation equipment that would be the most appropriate for the organization. Dealing with the questions becomes a second major function of the OAC.

The survey of work stations in one application indicated the

need for approximately 20 units for Phase I, and had yielded an inventory of the likely functions that the staff would perform on the units.

The OAC will compare the generic designs of different office technologies as a way of reviewing alternative configurations. The OAC will also consider the advantages of centralized and decentralized systems, and the applicability of various types of technologies to specific functions.

The ideal system which was considered was capable of:

- o Performing multiple functions, including at a minimum word processing and data analysis;
- o Communications between offices, and to the offsite, mainframe computer used for the MIS.
- o Linking to a central storage and computing unit, and utilizing hard disk storage; and
- o Facilitating a local area network.

The participatory process in which the system was designed and selected again highlights in the advantages of the OAC as an implementation strategy. As a result of the OAC's deliberations, and its review of alternative types of systems and equipment, the individuals within the agency had greater ownership over the system than would have been the case with other implementation strategies.

Planning for Implementation

A third function of the OAC is to construct a detailed plan

for the implementation process. Once the specific equipment had been identified, and the number of units to be obtained had been decided, the committee set about to develop a detailed implementation plan. The plan will cover every activity associated with the new system, including the furniture and electrical needs, delivery and installation dates, training priorities, and the removal of old equipment. The plan will also indicate the individuals who will be responsible for each activity. The plan takes the form of a schedule, showing the deadline for each activity.

This plan will cover the organization's activities in considerable detail, and therefore facilitated full acknowledgment of potential competition with other, ongoing organizational activities. The sequencing was as follows:

1. Deliver, install, and check-out new equipment;
2. Train first group of support staff operators;
3. Convert disks, as necessary, and remove equipment previously used by first group of operators while they are in training;
4. Train second group of support staff operators;
5. Convert disks, as necessary, and remove all remaining word processing and memory typewriter equipment;
6. Provide training on system's communications function between offices;

7. Remove telecopiers;
8. Provide training on inputting data into the MIS using the new equipment; and
9. Remove dumb terminals used in conjunction with the MIS.

A similar transaction from old to new might have had to do with the forms and documents and records used by the organization.

The OAC members will investigate the entire range of forms, with greater care and understanding than might have been done by an external consultant, vendor, or overhead agency. This activity was especially enjoyable to the Lehman students who did not have opportunities in the past to conduct these sorts of field research activities. Operations that could be accomplished quickly and easily were designed to be part of the initial implementation of the new system; operations that were more difficult were purposely delayed until later in the implementation process. The result of this careful planning was a minimum of confusion during the transition as the new activities were implemented.

Overcoming Internal Resistance to Change

In any conversion to an automated system, certain individuals at the organization will be skeptical about the value of such a system, and had openly declared their unwillingness to consider using it.

In organizing an OAC, potentially resistant individuals actually can be made members of the committee. As a result, an important implementation outcome-produced by the use of the OAC--was the reduction of a potential barrier to change.

Implementation Occurs

The first type of outcome, related to productivity gains, was the fact that the new office automation system will be applied quickly to the staff's routine office functions.

Documented Productivity Gain

A follow-up survey of work stations will need to be conducted, to be compared with the work station survey initially done before the new system had been installed. This survey will focus on the identification of potential productivity gains, mainly among the support staff because the professional staff had not been fully trained to use the system at this early time.

Based on a follow-up survey in the original project, twelve of the support staff reported that the new system was helping to improve their productivity. Four said they had experienced no productivity gains, and one was a "casual" user and was not able to respond. Among the other respondents, examples of productivity increases included the following:

- A mailing by the agency's information center, that took three hours to do before the new system, now took 15 minutes;
- A technical assistance authorization letter in one

division which took one hour to do before the new system, now took 15 minutes;

- Information about training applicants that was previously maintained in a hand-written log in the Boulder office was now being entered into the new system; this eliminated the need to re-type applicant information in four subsequent steps, and represented a savings of numerous clerical hours; and
- The processing of grant packages that used to take 1-1/2 hours before the new system, could now be done in half the time in the Washington, D.C office.

In the follow-up survey, the support staff who reported no productivity gains gave the following reasons: (1) the workload had increased and consumed all of the productivity gains, so that the overall productivity appeared to have remained the same; (2) the access to machines and demands of other activities prevented an adequate time for learning; (3) the supervisor still required certain letters to be typed, even though the work could be done more quickly on the system; and (4) the traditional typing was just as fast using the new system.

In addition to the interviews of work stations of the support staff, ten supervisors were interviewed. Of these, five reported that their productivity had increased after their supervisor(s) began using the new system. Three reported that

their productivity had not increased, and two were unable to make a judgment. Of the five reporting improvements, the reasons generally related to the improved quality of the work (especially through the use of the spelling-check function), and an acknowledgment that the work was being produced and returned faster than before.

This initial evaluation period--i.e., only two to three months after the installation of the equipment--was clearly too early to ascertain whether gains of similar sorts had occurred among the professional staff. Many of these staff members had not received any training by April, and the second wave of work stations--mostly dedicated to the needs of the professional staff--has not yet occurred. However, the initial gains among the staff functions represented significant improvement that had do hold promise for the future.

Summary

This use of a case study can be valuable in teaching office automation change processes. Through the use of the OAC function, implementation of change can become easier and be controlled. Implementation in this illustrative case study occurred in an orderly manner, and involved key staff persons from the agency itself, as a result of the OAC.

The case study has described the organization and functions of the OAC. In general, the OAC consisted of representatives of the entire agency, from executive to secretarial levels--none of

whom had strong technical background. The OAC allowed the agency to select the appropriate office automation system, to plan for its implementation, and to monitor the implementation process. As a result, the OAC provided the management of the agency with an internal control over the implementation of a new office automation system, while also producing some clear productivity gains.

The use of this case study as a teaching tool has provided my students with the opportunity to re-enact a real life scenario. As such they began to appreciate the types of problems that they are likely to face in attempting to manage change in a complex organization.

Bibliography

Yin, R.K. and Moore, G.B. Planning and implementing an automated office. Cosmos Corporation, Washington, D.C., December, 1984.